

REMARKS

The Official Action mailed November 12, 2008, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on April 25, 2006; May 23, 2006; April 20, 2007; March 3, 2008; March 12, 2008 and September 18, 2008.

A further Information Disclosure Statement is submitted herewith and consideration of this Information Disclosure Statement is respectfully requested.

Claims 1-17 and 19-22 were pending in the present application prior to the above amendment. Claim 16 has been amended to better recite the features of the present application, and dependent claims 23-28 have been added to recite additional protection to which the Applicant is entitled. The Applicant notes with appreciation the indication of the allowance of claims 6, 7, 8/6, 12, 13 and 15/12 (Box 5, Office Action Summary, page 9, Paper No. 20081030). Although dependent claims 8/7 and 14/12 are not explicitly listed as allowable claims, since independent claims 7 and 12 are allowed, claims 8/7 and 14/12 also appear to be allowed. Accordingly, claims 1-17 and 19-28 are now pending in the present application, of which claims 1, 2, 6, 7, 9, 10, 12, 16, 17 and 19 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 3 of the Official Action rejects claims 1, 2 and 3 as obvious based on the combination of U.S. Patent No. 6,541,130 to Fukuda, U.S. Patent No. 7,122,845 to Uchida and U.S. Patent No. 6,589,673 to Kido. Paragraph 26 of the Official Action rejects claim 9 and 10 as obvious based on the combination of Fukuda, Uchida and Kido. The Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

There is no proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Fukuda and Uchida or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be modified in the manner asserted in the Official Action, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The test for obviousness is not whether the references "could have been" combined or modified as asserted in the Official Action, but rather whether the references should have been. As noted in MPEP § 2143.01, "The mere fact that

references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art" (emphasis in original). KSR International Co. v. Teleflex Inc., 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007). Thus, it is respectfully submitted that the standard set forth in the Official Action is improper to support a finding of *prima facie* obviousness.

The Official Action concedes that Fukuda does not teach "that the first electrode has a non-light-transmitting property in that the disclosed device is a 'bottom emission' device wherein the substrate is transparent and the upper electrode is reflective" (page 3, Paper No. 20081030). The Official Action asserts that "it is well known in the art that a top emission device can be formed by reversing the two electrodes such that the top electrode is transparent and the bottom electrode is reflective" (Id.). The Official Action relies on Uchida to allegedly teach "a top emitting and bottom emitting configuration of the device and shows that the top emitting device employs a transparent ITO electrode on the top side and a reflective substrate on the bottom" (Id.). The Official Action asserts that "Uchida is evidence that a person of ordinary skill in the art would find a reason, suggestion or motivation to form a top emitting device" and that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fukuda by forming a top emitting device by transposing the electrodes for advantages such as increasing the opening ratios of the pixels according to the teachings of Uchida" (pages 3-4, Id.). The Applicant respectfully disagrees and traverses the above assertions in the Official Action.

As noted in MPEP § 2143.01, Part V, if a proposed modification renders the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Also, as noted in MPEP § 2143.01, Part VI, if a proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references

are not sufficient to render the claims *prima facie* obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Fukuda appears to disclose that "(a) Setting the Optical Film Thickness on the Cathode Side" and "(b) Setting the Optical Film Thickness on the Anode Side" (column 8, lines 57-58, and column 9, line 7). Specifically, Fukuda discloses the following (column 10, lines 24-31):

In the organic EL element as shown in FIG. 14, the main light-traveling routes of the light emitted on the light emitting interface are as follows: the route (1) the light goes from the light emitting interface directly to the outside; the route [(2)] the light is reflected on the metal electrode, comes back to the light emitting interface, and then goes outside directly; and the route (3) the light is reflected on the glass, comes back to the light emitting interface, and goes outside.

Further, Fukuda discloses that "[t]he largest refractive index difference between the glass substrate 2 and the transparent electrode 3 is taken into consideration" (column 10, lines 17-19) and "since the reflection occurs on the interface between the metal electrode 5 and the metal electrode side portion 4D of the organic compound material layer, a phase difference π occurs before and after the reflection of light" (column 11, lines 26-29).

As such, Fukuda discloses a particular principle of operation that requires a layered structure of a glass substrate, a transparent electrode (ITO or the like), functional layers (hole transport layer, electron transport layer, or the like), a light emitting layer, functional layers (hole transport layer, electron transport layer, or the like), and a metal electrode formed in this order. Specifically, Fukuda appears to require the existence of an interface between a glass substrate and a transparent electrode to obtain the "largest refractive index difference."

On the other hand, Uchida appears to disclose that "the display device 10 is constructed in a so called back emission type in which the emitted light of the organic EL element is extracted from the substrate 11" and that "the display device 50 is a so called 'top emission type of display device' in which the light emitted in the light-emitting

layers 14 is extracted from the opposite side of the substrate 11" (column 4, lines 37-39, and column 6, lines 62-66, referring to Figures 1 and 4). Comparing Figures 1 and 4, Uchida may teach that a top emission type of Uchida's display device can be formed by reversing two electrodes such that a top electrode is transparent and a bottom electrode is reflective without changing other layers of the overall structure. However, Uchida does not teach that all top emission type display devices could or should be modified to be bottom emission type display devices merely by reversing two electrodes. That is, the modification in Uchida appears to apply to its own unique layered structure and does not necessarily apply to other prior art references.

The Applicant respectfully submits that Uchida does not teach or suggest that the transparent electrode 3 and the metal electrode 5 in Fukuda could or should be reversed. As noted above, Fukuda appears to require an interface of a glass substrate and a transparent electrode for a large refractive index difference, a layered structure as noted above, and an interface in which a phase change π occurs. If Fukuda were modified in the manner proposed by the Official Action, i.e. by reversing electrodes, it appears that the principles of operation of Fukuda would be changed as well and the Official Action does not demonstrate that the interface of Fukuda, the necessary large refractive index difference, layered structure, and phase change π would continue to function as intended. That is, the Examiner's proposed modification or combination of the prior art appears to change the principle of operation of the prior art invention being modified. As such, there is no suggestion or motivation to make the proposed modification, and the teachings of the references are not sufficient to render the claims *prima facie* obvious.

Therefore, the Applicant respectfully submits that the Official Action has not provided a proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Fukuda and Uchida or to combine reference teachings to achieve the claimed invention.

Kido does not cure the deficiencies in Fukuda and Uchida. Kido is relied upon to allegedly teach doping an organic layer with a metal oxide (page 4, Paper No. 20081030). However, Kido does not teach or suggest a reason why one of ordinary skill in the art at the time of the present invention would have modified Fukuda and Uchida in a manner that renders the prior art invention (*i.e.* Fukuda) being modified unsatisfactory for its intended purpose and that changes the principle of operation of the prior art invention being modified (*i.e.* Fukuda).

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Paragraph 35 of the Official Action rejects claims 16, 17, 19 and 20 as obvious based on the combination of Fukuda, Uchida, Kido and U.S. Patent No. 6,969,948 to Urabe. Urabe does not cure the deficiencies in Fukuda, Uchida and Kido. Urabe is relied upon to allegedly teach three color light emitting devices on an emission side (page 8, Paper No. 20081030). However, Urabe does not teach or suggest a reason why one of ordinary skill in the art at the time of the present invention would have modified Fukuda, Uchida and Kido in a manner that renders the prior art invention (*i.e.* Fukuda) being modified unsatisfactory for its intended purpose and that changes the principle of operation of the prior art invention being modified (*i.e.* Fukuda).

Paragraph 13 of the Official Action rejects claim 4 as obvious based on the combination of Fukuda, Uchida and U.S. Publication No. 2005/0249974 to Mori. Paragraph 18 of the Official Action rejects claim 5 as obvious based on the combination of Fukuda, Uchida and Kido. Paragraph 20 of the Official Action rejects claims 8/1 and

8/2 as obvious based on the combination of Fukuda, Uchida, Kido and U.S. Patent No. 6,111,274 to Arai. Paragraph 28 of the Official Action rejects claim 11 as obvious based on the combination of Fukuda, Uchida, Kido and Mori. Paragraph 30 of the Official Action rejects claim 14 as obvious based on the combination of Fukuda, Uchida and Kido. Paragraph 32 of the Official Action rejects claims 15/9 and 15/10 as obvious based on the combination of Fukuda, Uchida, Kido and Arai. Paragraph 40 of the Official Action rejects claim 21 as obvious based on the combination of Fukuda, Uchida, Kido, Urabe and Mori. Paragraph 42 of the Official Action rejects claim 22 as obvious based on the combination of Fukuda, Uchida, Kido and Arai.

Mori and Arai do not cure the deficiencies in Fukuda, Uchida, Kido and Urabe. Mori is relied upon to allegedly teach a hole generating layer comprising one of molybdenum oxide, vanadium oxide and rhenium oxide (page 4, Paper No. 20081030) and Arai is relied upon to allegedly teach that an electrode comprising ITO also includes silicon oxide (page 5, Id.). However, Mori and Arai do not teach or suggest a reason why one of ordinary skill in the art at the time of the present invention would have modified Fukuda, Uchida, Kido and Urabe in a manner that renders the prior art invention (*i.e.* Fukuda) being modified unsatisfactory for its intended purpose and that changes the principle of operation of the prior art invention being modified (*i.e.* Fukuda).

At this opportunity, claim 16 has been amended for clarity. Specifically, claim 16 has been amended to recite "a second layer serving as a layer including a light-emitting layer over the first layer."

New claims 23-28 have been added to recite additional protection to which the Applicant is entitled. The features of claims 23 and 24 are supported in the present specification, for example, by paragraph [0049], and the features of claims 25-28 are supported in the present specification, for example, by paragraph [0050].¹ The Applicant respectfully submits that new claims 23-28 are in condition for allowance.

¹ Citations are made in reference to the present specification as filed.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,


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